

**NAME**

SRP\_create\_verifier\_ex, SRP\_create\_verifier, SRP\_create\_verifier\_BN\_ex, SRP\_create\_verifier\_BN, SRP\_check\_known\_gN\_param, SRP\_get\_default\_gN - SRP authentication primitives

**SYNOPSIS**

```
#include <openssl/srp.h>
```

The following functions have been deprecated since OpenSSL 3.0, and can be hidden entirely by defining **OPENSSL\_API\_COMPAT** with a suitable version value, see **openssl\_user\_macros(7)**:

```
int SRP_create_verifier_BN_ex(const char *user, const char *pass, BIGNUM **salt,
                             BIGNUM **verifier, const BIGNUM *N,
                             const BIGNUM *g, OSSL_LIB_CTX *libctx,
                             const char *propq);
char *SRP_create_verifier_BN(const char *user, const char *pass, BIGNUM **salt,
                             BIGNUM **verifier, const BIGNUM *N, const BIGNUM *g);
char *SRP_create_verifier_ex(const char *user, const char *pass, char **salt,
                             char **verifier, const char *N, const char *g,
                             OSSL_LIB_CTX *libctx, const char *propq);
char *SRP_create_verifier(const char *user, const char *pass, char **salt,
                          char **verifier, const char *N, const char *g);

char *SRP_check_known_gN_param(const BIGNUM *g, const BIGNUM *N);
SRP_gN *SRP_get_default_gN(const char *id);
```

**DESCRIPTION**

All of the functions described on this page are deprecated. There are no available replacement functions at this time.

The **SRP\_create\_verifier\_BN\_ex()** function creates an SRP password verifier from the supplied parameters as defined in section 2.4 of RFC 5054 using the library context *libctx* and property query string *propq*. Any cryptographic algorithms that need to be fetched will use the *libctx* and *propq*. See "ALGORITHM FETCHING" in **crypto(7)**.

**SRP\_create\_verifier\_BN()** is the same as **SRP\_create\_verifier\_BN\_ex()** except the default library context and property query string is used.

On successful exit *\*verifier* will point to a newly allocated BIGNUM containing the verifier and (if a salt was not provided) *\*salt* will be populated with a newly allocated BIGNUM containing a random salt. If *\*salt* is not NULL then the provided salt is used instead. The caller is responsible for freeing the

allocated *\*salt* and *\*verifier* BIGNUMS (use **BN\_free(3)**).

The **SRP\_create\_verifier()** function is similar to **SRP\_create\_verifier\_BN()** but all numeric parameters are in a non-standard base64 encoding originally designed for compatibility with libsrp. This is mainly present for historical compatibility and its use is discouraged. It is possible to pass NULL as *N* and an SRP group id as *g* instead to load the appropriate gN values (see **SRP\_get\_default\_gN()**). If both *N* and *g* are NULL the 8192-bit SRP group parameters are used. The caller is responsible for freeing the allocated *\*salt* and *\*verifier* (use **OPENSSL\_free(3)**).

The **SRP\_check\_known\_gN\_param()** function checks that *g* and *N* are valid SRP group parameters from RFC 5054 appendix A.

The **SRP\_get\_default\_gN()** function returns the gN parameters for the RFC 5054 *id* SRP group size. The known ids are "1024", "1536", "2048", "3072", "4096", "6144" and "8192".

## RETURN VALUES

**SRP\_create\_verifier\_BN\_ex()** and **SRP\_create\_verifier\_BN()** return 1 on success and 0 on failure.

**SRP\_create\_verifier\_ex()** and **SRP\_create\_verifier()** return NULL on failure and a non-NULL value on success: "\*" if *N* is not NULL, the selected group id otherwise. This value should not be freed.

**SRP\_check\_known\_gN\_param()** returns the text representation of the group id (i.e. the prime bit size) or NULL if the arguments are not valid SRP group parameters. This value should not be freed.

**SRP\_get\_default\_gN()** returns NULL if *id* is not a valid group size, or the 8192-bit group parameters if *id* is NULL.

## EXAMPLES

Generate and store a 8192 bit password verifier (error handling omitted for clarity):

```
#include <openssl/bn.h>
#include <openssl/srp.h>

const char *username = "username";
const char *password = "password";

SRP_VBASE *srpData = SRP_VBASE_new(NULL);

SRP_gN *gN = SRP_get_default_gN("8192");
```

```
BIGNUM *salt = NULL, *verifier = NULL;  
SRP_create_verifier_BN_ex(username, password, &salt, &verifier, gN->N, gN->g,  
    NULL, NULL);
```

```
SRP_user_pwd *pwd = SRP_user_pwd_new();  
SRP_user_pwd_set1_ids(pwd, username, NULL);  
SRP_user_pwd_set0_sv(pwd, salt, verifier);  
SRP_user_pwd_set_gN(pwd, gN->g, gN->N);
```

```
SRP_VBASE_add0_user(srpData, pwd);
```

## SEE ALSO

**openssl-srp(1)**, **SRP\_VBASE\_new(3)**, **SRP\_user\_pwd\_new(3)**

## HISTORY

**SRP\_create\_verifier\_BN\_ex()** and **SRP\_create\_verifier\_ex()** were introduced in OpenSSL 3.0. All other functions were added in OpenSSL 1.0.1.

All of these functions were deprecated in OpenSSL 3.0.

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